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by Chuck Fergus

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The HERON FAMILY

Have you ever hiked along the edge of a quiet stream or marsh and startled a big, long-legged bird that flapped slowly out of the water, leaving only a widening ripple? Chances are good that the bird was a heron.

There are about 60 species of herons distributed over most of the world, except in the extreme northern and southern regions. Herons are most common in the tropics. Herons, bitterns, and egrets are closely related, belonging to the family Ardeidae of the order Ciconiiformes. Other close avian relatives include storks, ibises, spoonbills, and flamingos. Herons are wading birds with long, slender legs, long necks, and long, heavy bills tapering to a sharp point. Their wings are broad and rounded, their tails short. Most herons, especially the larger ones, are graceful in form and movement.

Heron are predators, feeding on animal life (fish, frogs, crayfish, snakes, insects, invertebrates, and small rodents) found in the zone of shallow water and shoreline. Herons swallow food whole and later regurgitate pellets of indigestible matter. They inhabit both freshwater and saltwater areas; in Pennsylvania, they can be spotted on lakes, reservoirs, ponds, rivers, woods streams, bogs, marshes, and swamps, where they typically stand at the water's edge or walk slowly through the shallows. They may also perch in trees near or over water.

A heron is a shy bird: when approached by a human, it usually takes off in slow flight, with head and neck drawn back in an S-shape and legs held straight to the rear. Most herons are strong fliers, propelling themselves with deep, pumping wing strokes.

Certain adaptations help a heron wade about and catch prey in shallow water. The most obvious are the legs, which elevate the bird above the water's surface. The toes are long and flexible for walking or standing on soft ground. The bill is sharp-tipped, but it is used for grasping rather than impaling. The long, muscular neck delivers a lightning-quick blow, with plenty of force to penetrate the water and seize a fish.

Heron have well-developed "powder down," areas of feathers whose tips continually disintegrate into powder; preening helps distribute this powder, which absorbs and removes fish oil, scum, and slime, thus keeping the rest of the plumage clean and dry. Herons preen with a serrated middle claw.

Males are aggressive and defend small territories in the breeding season. They fight (although rarely causing physical damage); sound harsh calls; go through elaborate, instinctive motions such as raising their wings, stretching their necks, fluffing their feathers, or erecting their crests; and some put on spectacular flight routines. In most species, bright colors appear on the bill, legs, or in the bare skin around the eye.

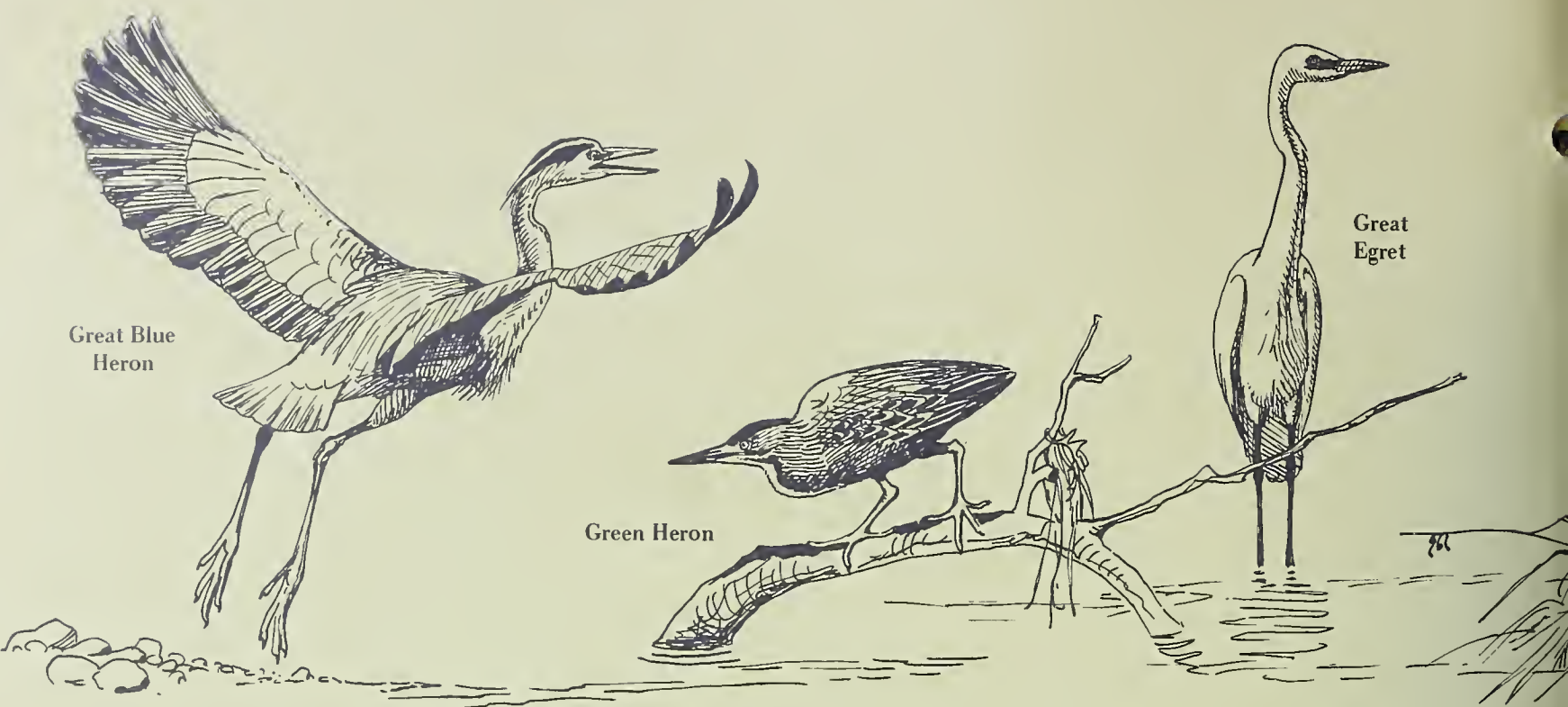
Often the male begins building a nest to attract a mate; then the female takes over construction and the male brings sticks and twigs. Mated herons defend a zone immediately around their nest against intrusion of other birds. Some species nest in colonies (sometimes called heron rookeries), while others are solitary nesters. Herons may nest in mixed colonies (great blue, black- and yellow-crowned night herons building nests in the same grove of trees, for example). Or, in certain parts of their range, they may nest with cormorants, pelicans, and ibises.

After breeding, 3-6 unmarked bluish, greenish, or brownish eggs are laid in a nest of sticks in a tree (herons and egrets) or a nest of grasses on the ground (bitterns). The eggs are incubated by both parents for 2½-4 weeks, depending on the species. Some herons begin incubating immediately after the first egg is laid, so that young hatch at intervals and differ in size at any given time. The young are altricial, remaining in the nest two to three weeks.

At first, parents regurgitate pre-digested liquid food to their nestlings. Later, they bring partly digested food, and finally whole fish, frogs, snakes, and other items. A growing heron or bittern will seize the base of its parent's bill in a scissors grip and wrestle with it. This triggers an impulse in the adult either to drop or regurgitate the food.

The following herons and allies, which breed in Pennsylvania, are covered in this Wildlife Note: great blue heron; green heron; great egret; black-crowned night heron; yellow-crowned night heron; least bittern; and American bittern. All are migratory, generally breeding in northern areas and migrating south in autumn. Some species migrate in flocks, some in small bands, and some individually.

Other herons occasionally visit Pennsylvania. The great white heron (which some taxonomists feel may be a color phase of the great blue heron) has been recorded three times in our state; it is the size of the great blue but is pure white, with yellow legs and bill. The little blue heron is a migrant occasionally spotted in April, and later in July and August. Little blues are 22 inches in length, with brownish heads and bluish-gray bodies. The cattle egret was first observed in



Pennsylvania in 1956 and is now common in some areas; its plumage is white, with brownish plumes on the back, lower breast, and crown, and a reddish bill and legs. The snowy egret (white, with black legs and bright yellow feet) is seen in spring and late summer. These four species breed farther south or along the Atlantic coast.

Wading birds are part of the complex web of life in the marshes and along the water's edge. When several species of herons inhabit a given stream, lake, or swamp, specialized feeding patterns may develop. The great blue heron usually wades in deeper water, looking for large fish. Common egrets hunt the slightly smaller fish found closer to shore. The green heron waits motionless for its prey near a log or bank; bitterns snatch frogs and tadpoles among the reeds. On dry ground, cattle egrets forage for grasshoppers and other insects stirred up by livestock, while the black- and yellow-crowned night herons patrol shallow waters in the late evening and at night.

Although mainly predators, herons are also prey for some species, including foxes, minks, hawks, and especially raccoons. Crows and tree-climbing snakes may rob unguarded nests. Few predators dare tackle an adult heron, especially one of the larger species.

At one time herons were slaughtered for their plumage, which was used to decorate women's hats, but today they have little to fear from humans. Herons are not hunted in the U.S. and, in fact, are protected by state and federal laws. However, they *are* affected by loss of habitat, notably in marshy or coastal areas taken up by expanding cities and towns.

Hérons, and many other species of wildlife, benefit from Pennsylvania Game Commission waterfowl projects and State Game Lands. Areas such as Pymatuning, Middle Creek, Shohola, and Blue Marsh provide many acres of excellent marshland habitat. In propagation areas (where human

visitors are not permitted to intrude), herons have ample isolated territory in which to breed and raise young.

Great Blue Heron (*Ardea herodias*)

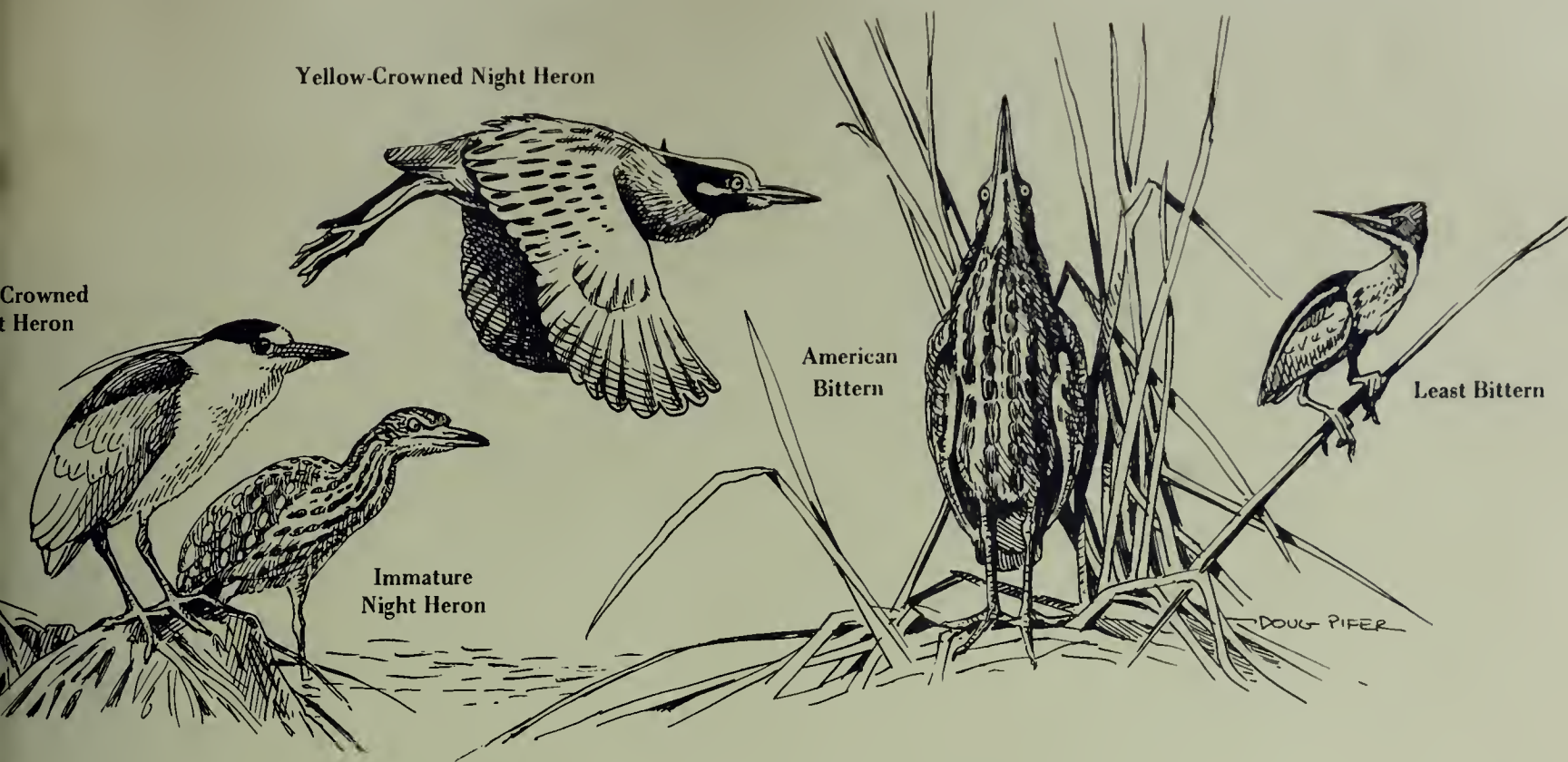
This is probably the bird which comes to mind most often when the word "heron" is mentioned. It is the largest of the dark herons, 38 inches long (as seen in the field) and with a 70-inch wingspread. A great blue heron's head is largely white (with a feathery black crest), the underparts are dark gray, and the back and wings are grayish-blue. The legs are dark.

When hunting, a great blue walks slowly through the shallows or stands in wait, head hunched on its shoulders. Favorite foods include fish (up to a foot in length), water snakes, frogs, crayfish, mice, shrews, and insects. Individuals are believed solitary except in breeding season. Call: three or four hoarse squawks.

Great blue herons inhabit saltwater or freshwater areas near trees suitable for nesting—the more remote and inaccessible, the better. They nest in colonies or among the nests of other herons, often in the same tree. The nest is a platform of large sticks lined with fine twigs and leaves and built in a sturdy crotch or on a limb. Its outside diameter is 25-40 inches. The male brings nesting material to the female, which does most of the actual building. Nests may be used several years.

The female lays 3-6 (usually four) pale bluish-green, unmarked eggs. Incubation is by both sexes and takes 28 days. Both parents feed the young, which are ready to leave the nest in three weeks.

In spring, the great blue heron is a common migrant in March and April; in summer, a breeding resident, with the



Yellow-Crowned Night Heron

Crowned
t Heron

American
Bittern

Least Bittern

Immature
Night Heron

greatest concentrations of nests occurring in the northwestern counties. The species generally breeds across the northern U.S., southern Canada, and Alaska. In the fall, great blue herons pass through our state from July to October. They are winter residents, with a few remaining along creeks and other open water. The species winters principally along the Atlantic coast, the southern states, and Middle and South America.

Green Heron (*Butorides virescens*)

This small heron is found in ponds and along wooded streams. Its length is 14 inches, its wingspread 25 inches. The bluish-green back and wings give the bird its name; underparts are dark, while the neck and head are reddish-brown and the crown is black. This bird may appear all dark from a distance, especially on a cloudy day. Immatures resemble American bitterns.

A green heron flies with deep wingbeats. Its call is a sharp, descending *kew*. The green heron feeds on fish, frogs, insects, worms, lizards, and salamanders, hunting early in the morning and late in the afternoon.

Green herons usually nest in shrubs or trees overhanging the water, but sometimes in orchards and groves away from any water source. A pair may nest off by itself or in a loose colony of other herons (the green is not as gregarious as the great blue). The nest is a platform of twigs and sticks lined with finer material; some nests are so shallow and flimsy that the eggs can be seen through the bottom. The male selects the nesting site and starts building, and the female finishes the task. Outside nest diameter is 10-12 inches. Four to six oval, pale blue or green unmarked eggs are laid, which both sexes incubate for 20 days. Some pairs raise two broods.

In spring, green herons are common April-May migrants. In summer, they are breeding residents (the species breeds

throughout the eastern U.S., Middle America and in Arizona and Texas); in fall, common July-September migrants, with stragglers into November. Green herons rarely winter as far north as Pennsylvania.

Great Egret (*Casmerodius albus*)

The great egret—also called the common or American egret—was nearly gone from the U.S. by the early twentieth century. For years the birds had been killed for their long, white body plumes, used to feather women's hats. Strong conservation laws saved the species, which is repopulating its former range.

A great egret's plumage is pure white, the bill yellow, and the legs and feet glossy black. It's the largest white heron likely to be observed in Pennsylvania, with a 32-inch length (not counting tail plumes), a 55-inch wingspread, and a standing height of about two feet. Preferred foods are fish, small mammals, amphibians, and insects.

Egrets inhabit swamps, brushy lake borders, ponds, islands, and mudflats. Their nests are solitary or in colonies, sometimes with other heron species, usually 10-50 feet up in trees. In forests of large trees—beech and red maples are favorites—egret nests may be 80 feet in the air, along with the nests of great blue herons. Nests are made of sticks and twigs, two feet in diameter, sometimes lined with leaves, moss, and grass. Eggs: 3-4 long oval, blue or greenish-blue, unmarked. Incubation is performed by both sexes and takes 23-24 days.

In spring, egrets are rare April-June migrants. In summer, they're rare breeding residents (the species breeds on the coast, farther south, and also in the Eastern Hemisphere). They are common July-October migrants. Egrets are rare winter residents, sometimes staying on the Tinicum Refuge in Delaware and Philadelphia counties.

Black-Crowned Night Heron (*Nycticorax nycticorax*)

Night herons have heavy bodies and short, thick necks. This species is 20 inches in length, with a 44-inch wingspread. Adults have glossy greenish-black backs, pale gray or white undersides, and yellow-orange legs; three white, six-inch plumes extend back from the black crown. Immatures are heavily streaked with brown and lack the red eye of the adult.

In flight, black-crowned night herons resemble slow, light-colored crows. They fly in loose flocks and often roost communally; basically inactive during the day, they hunt at night. Food: mainly fish, some eaten as carrion; also dragonflies, other insects, crayfish, worms, and small rodents. Call is a single *kwawk*, most often given at night.

These herons adapt to extremely varied habitat: fresh, salt, and brackish water; trees, shrubs, forests, thickets, and even city parks. They nest close together in small to large colonies, in trees, shrubs, or on the ground in cattail stands. Nests are built of sticks, twigs, or reeds, and sometimes lined with finer material. Both sexes build (construction takes 2-5 days). Females lay 3-5 pale blue or green unmarked eggs, which hatch in 24-26 days.

In spring, black-crowned night herons are uncommon to common migrants from April to May. In summer, they are breeding residents (rare in central and northern Pennsylvania, but fairly common in the southern counties). Fall: August and September migrants. Winter: residents in the southeast, although most individuals go farther south.

Yellow-Crowned Night Heron (*Nyctanassa violacea*)

This bird is similar in size and body configuration to the closely related black-crowned night heron, except that the yellow-crowned has slightly longer legs (standing height about 1½ feet). It has a yellow patch on its head, a gray body, and a black and white face. The call, a strident *kwawk*, is slightly higher-pitched than that of the black-crowned.

Yellow-crowned night herons hunt mainly at night but also at times during the day. They eat frogs, fish, salamanders, lizards, and insects. They nest colonially, sometimes with other herons. The stick nest is built in a tree or shrub and may be lined with fine twigs, rootlets, or leaves. Both sexes build, or they may re-use an old nest. This species is more secretive in its nesting habits than our other herons, with the exception of the bitterns. Eggs: 3-4 smooth, pale bluish-green, unmarked. Incubation is by both sexes.

In spring, yellow-crowned night herons migrate through our state in April and early May. In summer, they are breeding residents in the southeastern area; most nesting that does occur is concentrated in Cumberland, Lancaster, and Montgomery counties. In fall, they are rare August-October migrants; and they winter principally in the southern U.S., Middle America, and South America.

Least Bittern (*Ixobrychus exilis*)

The least bittern is the smallest of our herons, 11-14 inches long with a 17-inch wingspread. It has large buffy wing patches; a black crown, tail, and back; and yellow legs. This shy bird is not often observed, as it usually hides in tall grasses and sedges. A weak flier, the least bittern would rather run from danger or "freeze" by standing motionless with its long, tapered bill pointed upward (thus blending into the marsh background like a stick or reed). Food: insects, salamanders, fish, frogs, and tadpoles. The call of the least bittern is three or four low, soft *coos*.

The species nests on the ground in marshes, bogs, or brackish water areas. Nests are six- to 10-inch wide platforms of dead plant material interwoven with living plants, often built in thick cattails, tall grass, or under bushes 1-8 feet from the water. The female lays 4-5 pale bluish-green, unmarked eggs. During incubation (17-20 days), adults do not fly directly to their nest: they land nearby and approach quietly through the ground cover.

Least bitterns are rare April-May spring migrants. In summer, they are rare breeding residents (the species breeds throughout the East and in parts of the Western U.S.). In fall, they are rare August-September migrants. They winter principally in Florida, Texas, and Middle America.

American Bittern (*Botaurus lentiginosus*)

The American bittern is 23-24 inches long, has a 45-inch wingspread, and a 1½-foot standing height. Plumage is dappled dark and light brown, with a black streak on each side of the upper neck, and yellow legs. In flight, which is slow and deliberate, the black flight feathers are distinctive.

This shy, elusive bird inhabits the tall vegetation of freshwater marshes. Most active at dusk and at night, it preys on mice, snakes, lizards, salamanders, frogs, insects, etc.; an individual hunts by standing motionless and waiting for prey to pass. Like the least bittern, the American bittern hides by freezing with its bill pointed up. On the breeding grounds, it makes a hollow croaking or pumping sound, *oonck-a-tsoonck*, from which it earns the colloquial name "thunder pumper." The species does not flock.

Favored habitat: marshes, bogs, and swamps, especially where cattails and bulrushes grow. Solitary nesters, bitterns build 10- to 16-inch platforms of dried cattails, reeds, or grasses on dry ground among tall vegetation. Eggs: 3-7, usually 4-5, buffy brown to olive-buff, unmarked. Incubation, mainly by the female, lasts 24 days, beginning with the first egg.

In spring, American bitterns are uncommon migrants in April and early May. In summer, they are breeding residents, nesting across the northern U.S. and southern Canada. They are uncommon fall migrants from August through September. Some birds winter in our state, but the majority migrate to the southern U.S. and Middle America.

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